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# *AGRENIA LAMELLOSA*, A NEW SPECIES OF COLLEMBOLA (ISOTOMIDAE) FROM PENNSYLVANIA

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*Abstract.*—The new species differs from the six other nearctic members of the genus by the strongly developed ventral lamella of the mucro. Epitoky is reported in reproductive males. The nearctic distribution of *Agrenia* appears to have two components: A western montane species complex and a corresponding eastern complex which is still largely unknown. The new species is the first verified eastern species. A second undescribed species was seen in an old sample from North Carolina.

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The genus *Agrenia* Börner, 1906, was revised by Fjellberg (1986). The formerly monotypic genus proved to be a complex of several species. Five new species were described from North America in addition to the classical *bidenticulata* (Tullberg, 1876): *agilis, atroviridis, cyanura, polymorpha,* and *riparia.* Within the U.S., *bidenticulata* and *riparia* were reported from Alaska and *cyanura* from Oregon. The other three nearctic species appeared in Alberta and/or British Columbia.

Christiansen & Bellinger (1980), referring to *bidenticulata* s.l., reported the taxon from the following states in the east: New York, Connecticut, Pennsylvania, Indiana, Tennessee, North Carolina, and Alabama, and from the following western states: Colorado, Utah, Wyoming, Idaho, Montana, Oregon, Washington, Alberta, British Columbia and Alaska. There are several additional records from arctic Canada. Thus, the distribution of the genus seems to cover the mountainous states in the west and in the east, being absent from the great plains (the record from Indiana refers to a juvenile specimen and should be verified). Probably a number of still undescribed species are involved.

Through the kind assistance of Dr. Robert D. Waltz, I obtained a sample of *Agrenia* collected in a stream in Centre County, Pennsylvania. It proved to be an unknown species which is described below.

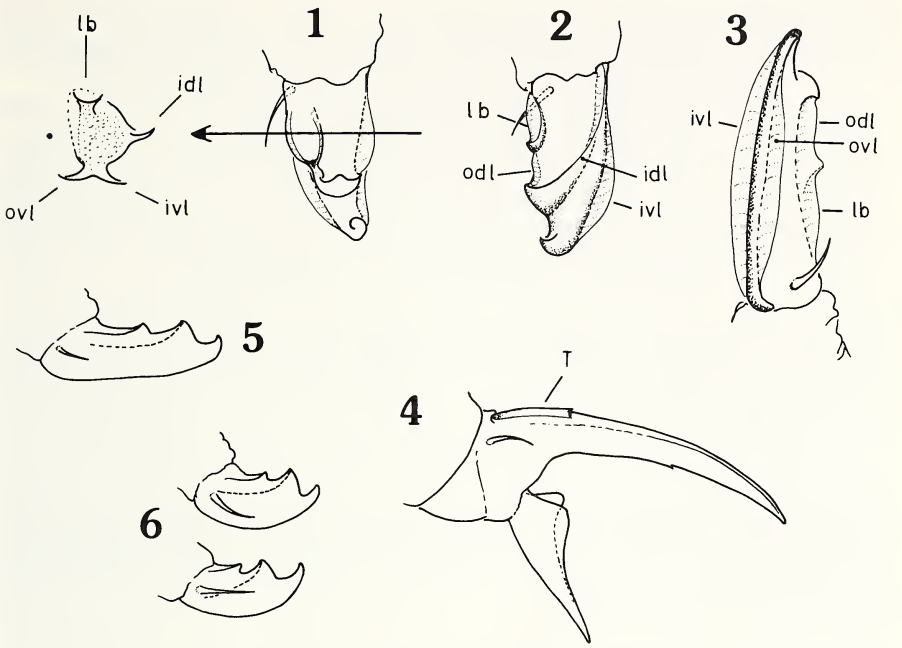
**Agrenia lamellosa**, new species
Figs. 1–5

*Type material.* Holotype (slide), USA, Pennsylvania, Centre Co., Slab Cabin Run, 6 km SW State College. 15–16.vii.1981. Drift net sample. P. H. Adler & R. W. Light leg. In USNM.

*Paratypes* (all slide specimens from the type locality). 3 in USNM, 3 in CNC, 1 in BMNH, 1 in TM.

*Description.* Size 1.8 mm (largest specimen), reproductive adults from 1.2 mm.

Color pale blue gray, tergites of thorax and anterior abdomen slightly darker. Antennae, eye-spots, central head-spot and neck region bluish black (specimens were stored 6 years in alcohol and probably have faded).




Figs. 1–6. *Agrenia lamellosa* n. sp. 1–3. Lamellary complex of left mucro. lb: Lamella of basal tooth; idl: Inner dorsal lamella; odl: Outer dorsal lamella; ivl: Inner ventral lamella; ovl: Outer ventral lamella. 1. Dorsal aspect, cross section to the left. 2. Dorsal, oblique. 3. Ventral, oblique. 4. Claw complex. T: Tunica. 5. Left mucro, lateral. 6. *Agrenia polymorpha,* left mucro. Two different specimens.

Antennae 1.7–1.9 as long as head diagonal (profile). Head with 8+8 ocelli (G and H smaller). PAO oval, subequal to an ocellus. Shape of head normal, not prognathous.

Body with open, uniform hair cover, macrochaetae not developed. Ventral tube with 2–5 frontal setae, 8–9 lateral, and more than 20 caudal setae. Tenaculum with 15–20 setae. Claws slender, tunica short (Fig. 4). Claw index (cf. Fjellberg, 1986) 2.6–3.2. Furca 2.0–2.2 as long as head diagonal. Dens 1.6–2.0 as long as manubrium. Mucro strong, with subequal apical and antapical teeth (Fig. 5). Ventral edge straight or gently curved. A short lateral seta present. Mucronal lamellae strongly developed, especially the outer and inner lamellae running along the ventral edge (Figs. 1–3).

Reproductive males slightly epitokous, with shortened hairs on Abd. 5–6, otherwise normal.

*Discussion.* The only other nearctic *Agrenia* species with the mucronal seta present, are *polymorpha* and *bidenticulata.* Both of these species differ from *lamellosa* by having a shorter mucro with strongly curved ventral edge and longer lateral setae (Fig. 6). The broad ventral lamella of *lamellosa* appears to be unique. I have checked *polymorpha, bidenticulata, cyanura, agilis,* and *riparia,* which all have a sharp, narrow ventral keel in the basal half, widening slightly in the apical half. Also the claws of *lamellosa* are more slender than in related species, and the tunica is shorter (Fig. 4).

The proportions of antennae, head and furca fall within the ranges of *polymorpha* and *bidenticulata.* The observed epitoky in reproductive males of *lamellosa* corresponds to the short-haired males of *polymorpha* and *riparia* (Fjellberg, 1986).

At least one other species of *Agrenia* is present in the eastern states. A sample collected by K. Christiansen in 1950 at Winkler's Creek, Watanaya, North Carolina, has individuals which have the same general mucro-shape as *lamellosa,* but the lateral seta seems to be absent. Mucronal lamellae are unclear due to the transparency of the old specimens. The claws are more robust and possess a larger tunica (claw index 2.3). The clearest difference, however, is found in the general hair cover. Whereas *lamellosa* has an uniform cover in the anterior part of the body, the North Carolina specimens have a strikingly "double" hair cover on head, thorax and the first abdominal segments, with mixed short and long setae all over (similar to the Japanese species *pilosa,* see Fjellberg, 1986, fig. 15). A description of this species should be based on freshly collected specimens.

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